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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,307	09/15/2003	Michael J. Roche	80107.078USI	1799
45445 7590 04/19/2007 LeMOINE PATENT SERVICES, PLLC C/O INTELLEVATE P. O. BOX 52050 MINNEAPOLIS, MN 55402			EXAMINER MERCADO, JULIAN A	
			ART UNIT 1745	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/19/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above; the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/662,307

Applicant(s)

ROCKE ET AL.

Examiner

Julian Mercado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,6,9-11,14,15,18-23 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,6,9-11,14,15,18-23 and 27-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/22/07

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Remarks

This Office action is responsive to applicant's amendment filed on January 22, 2007.

Claims 1, 5, 6, 9, 10, 11, 14, 15, 18, 19, 20, 21, 22, 23, 27, 28 and 29 are pending.

Claim Objections

The objection to claim 1 has been withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 15, 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for providing power from the battery if the fuel cell stack is not ready and the battery is ready, does not reasonably provide enablement for providing power from the battery *after* the load device is signaled to reduce a load. (emphasis added) The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. See Figure 4. The examiner notes that the logical diagram in Figure does not support providing power from the battery when it is determined that both the fuel cell and battery are not ready to source power, as shown by [440] and [450], respectively. This rejection is applied towards claim

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15, while claims 18 and 19 are rejected under 35 U.S.C. 112, first paragraph as being dependent upon a rejected base claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14, 15, 18, 19 and 27-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the step of “starting a fuel cell” followed by the step of “determining if the fuel cell is ready to source power” in lines 2-3. Based on the ordering of these steps, it is clear how a fuel cell may be started if it has yet to be determined if the fuel cell is ready to source power at all.

Claims 27-29 depend directly or indirectly from claim 26, which has been canceled. Thus, the scope of claims 27-29 cannot be ascertained.

Claims 15, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Keskula et al. (U.S. Pat. 6,406,806 B1).

The rejection is maintained for the reasons of record and for the additional reasons to follow in response to applicant's amendment and salient arguments presented therewith.

The examiner notes the present amendment to claim 1 now reciting a battery in lieu of the previously recited secondary power source. Keskula et al. is maintained for the reasons of record insofar as the secondary power source is specifically disclosed as a battery [62]. See col. 8 line 1 et seq.

As to the present amendment drawn to a power delivery interface and power multiplexer, Keskula et al. is maintained for the reasons of record in teaching a power delivery interface which includes a power conductor, i.e. battery pack monitor and a signal conductor, electrochemical engine control module, while a power multiplexer is maintained taught insofar as the battery is specifically disclosed to accept and store electrical energy supplied by the fuel cell. See col. 8 line 5 et seq. and line 50 et seq.

The present amendment to the controller being operatively coupled to the fuel cell and battery..., power multiplexer... and power delivery interface is maintained taught by Keskula et al. in that the controller is specifically disclosed "to reduce load to compensate for a voltage drop condition." See col. 11 lines 29-31.

Applicant's arguments filed with the present amendment have been fully considered, however they are not found persuasive. Applicant submits that Keskula et al. does not teach or suggest "a power multiplexer to provide power... from either the fuel cell or the battery" as presently claimed. This argument is not persuasive. In a first interpretation, Keskula et al. is

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maintained to teach providing power from the battery only, insofar as in a rapid stop or shutdown condition, “the load on the [fuel cell] stack is removed.” See col. 9 lines 39-52. In a second interpretation, Keskula et al. teaches in col. 11 lines 43-48 as follows:

[I]t will be possible to continue to propel the vehicle in a ‘limp home’ mode under reduced power. In some cases, it may be possible to depend upon the power supplied from the battery along with power supplied from the fuel cell stack to propel the vehicle.

It is clear that in this “limp home” scenario, the battery is the primary source of power. In col. 11 line 9 et seq., Keskula et al. further disclose that as the fuel cell voltage continues to decline, “the cell may exceed an acceptable working range and may reverse polarity permanently” whereby the cell then heats up “and adversely affects the integrity of the cell and the stack.” Thus, given that continuing to operate the fuel cell at a low voltage leads to adverse conditions which will lead to a shutdown condition necessitating “the load on the stack [to be] removed”, a “limp home” scenario will rely solely on the battery as its source of power. In a third interpretation, given that the limitation is stated in the alternative, i.e. “either” of the fuel cell or battery, Keskula et al. clearly teaches this feature insofar as *both* the fuel cell and battery operate in tandem; by “either the fuel cell or the battery”, it is asserted that this limitation does not preclude the combined operation of both the battery and the fuel cell.

(new rejection)

Claim 23 is rejected under 35 U.S.C. 102(b) as being anticipated by Keskula et al. (U.S. Pat. 6,406,806 B1).

The teachings of Keskula et al. are discussed above.

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Claim 23 has been amended to incorporate the limitations of claim 1 while further reciting a computer coupled to receive power. In Keskula et al., either of the battery pack module or BPM [71] or electrochemical engine control module EECM or [70] is deemed readable on the claimed computer. See col. 8 line 8 et seq. and Figure 3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

(new rejection)

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keskula et al. (U.S. Pat. 6,406,806 B1).

Claim 14 recites the step of starting the fuel cell, determining if the fuel cell is ready to source power, determining if the battery is ready to source power, and if neither the fuel cell nor the battery is ready to source power, signaling a load device to reduce a load. This feature is considered taught or at least suggested by Keskula et al. as shown Schematically in Figure 3, where step [100] is directed to starting of the fuel cell, step [102] is directed to determining if the fuel cell is ready to source power, step [104] is directed to determining the readiness of the fuel cell source power. Step [106] is a signal to reduce a load insofar as a "Rapid Stop" is the epitome of a reduced load. In applicant's own words (Remarks on page 1), Keskula et al. teaches a "battery bank (212) that is always connected." Thus, the readiness of the battery is

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determined, with the answer (at least as would be obvious to the skilled artisan) that the battery is not ready to source the power. The examiner reasons that since that the battery is always connected, if its readiness to source power were answered in the affirmative the battery would be connected to the load. As Keskula et al. instead directs a shutdown in step [106] condition, the skilled artisan would find obvious that the battery, already connected, is not on its own ready to source power.

Claims 20 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Colborn et al. (U.S. Pat. 6,787,259 B2)

The rejection is maintained for the reasons of record. The examiner notes the amendment to claims 20 and 21 now reciting method limitations. For the reasons set forth in the prior Office action, as claims 20 and 21 are drawn to an apparatus and as to the apparatus being adapted to hold machine-accessible instructions, the method limitations do not further limit the claim to a particular structure and as such have not been given patentable weight. The examiner maintains, however, that from the patentees disclosure it is clear that it is similarly capable of holding machine-accessible instructions, i.e. the functionality of a computer/controller.

Applicant's arguments have been fully considered, however they are not found persuasive. Applicant's arguments cite Figure 3 of Colborn et al. In reply, Figure 3 is not deemed relevant to the inventive scope of Colborn et al. as applied to the present claims, as Figure 3 is a "PRIOR ART" embodiment.

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Claims 9, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keskula et al.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colborn et al.

The teachings of Keskula et al. and Colborn et al. are discussed above.

The examiner maintains that absent of unexpected results it is asserted that the claimed type of battery, capacitor, supercapacitor or combinations thereof would be obvious variants to the battery as a secondary power source disclosed by either Keskula et al. or Colborn et al., as they are all art-recognized equivalent electrochemical devices.

In maintaining this ground of rejection, the examiner notes that no salient arguments directed thereto were submitted in the present amendment.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



J. Mercado

STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700

